

# PATENT ABSTRACTS OF JAPAN

Doc 3

(11)Publication number :

2001-274154

(43)Date of publication of application : 05.10.2001

(51)Int.CI.

H01L 21/316

H01L 21/31

H01L 21/8247

H01L 27/115

H01L 29/788

H01L 29/792

// C23C 16/46

(21)Application number : 2000-142137

(71)Applicant : APPLIED MATERIALS INC

(22)Date of filing : 15.05.2000

(72)Inventor : TOKAI NOBUO

MAEDA YUJI

HASHIMOTO MASAYUKI

(30)Priority

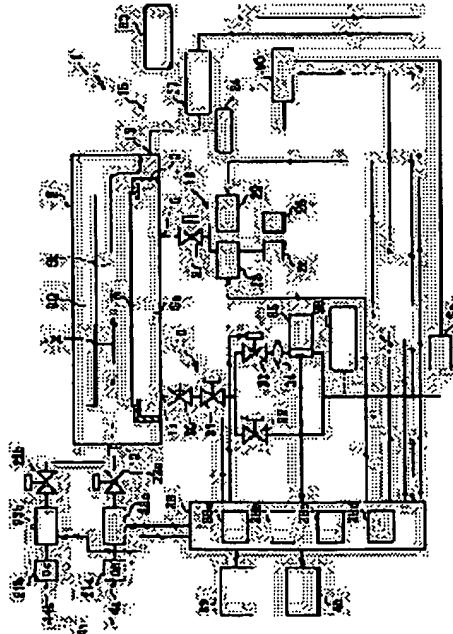
Priority number : 2000009298 Priority date : 18.01.2000 Priority country : JP

## (54) FILM FORMATION METHOD, APPARATUS, AND SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING THE SAME

(57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a film forming method and apparatus, which can form a thin film on a substrate to be processed with a reproducibility and uniformity for a sufficient film thickness and a sufficiently large film formation rate and with a simplified apparatus arrangement.

**SOLUTION:** A thermal treatment apparatus 1, which forms an SiO<sub>2</sub> thin film on an Si wafer W includes a reaction gas discharge system 15 for evacuating the space around the wafer W, a reaction gas supply system 14 for supplying hydrogen and oxygen gases G<sub>H</sub> and G<sub>O</sub> so as to be mixed on the wafer W, and a chamber 2 having a group of lamps 9G for heating the wafer W and a wafer-carrying member 3. The wafer W is placed into the chamber 2, the chamber 2 is reduced in pressure, the wafer W is mounted on the wafer-carrying member 3, a reaction gas X as a mixture of the hydrogen and oxygen gases G<sub>H</sub> and G<sub>O</sub> is supplied into a space S<sub>b</sub> are circulated within the chamber 2, and the lamp group 9G heats the wafer W.



## LEGAL STATUS

[Date of request for examination] 10.01.2002

[Date of sending the examiner's decision of rejection] 14.06.2004

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]